



Vydyne® 833C

Ascend Performance Materials Operations LLC - Polyamide 66/6 Copolymer

Monday, November 4, 2019

General Information

Product Description

833C is a PA66-based copolymer that features intermediate melt strength, shear thinning behavior, high tensile strength, ductility, and high clarity making it ideal for cast film applications. This material has ideal processability for cast film, oriented cast film (mono or biax), and profile/sheet/tubing extrusions. Specifically as an oriented film, it imparts extremely high strength and puncture resistance while maintaining a high elongation to break; further, depending on the annealing process, it can have tailored shrinkage from < 1% to > 20% making it appealing to a large number of end use film applications.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Features	• Chemical Resistant	• High Melt Stability	• High Toughness
	• Good Melt Strength	• High Strength	• Puncture Resistant
Uses	• Industrial Applications	• Profiles	• Tubing
	• Monofilaments	• Rods	• Vacuum Bagging Film
	• Multilayer Film	• Sheet	
Agency Ratings	• EC 1935/2004	• EU 10/2011	• EU 2023/2006
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Cast Film	• Extrusion	• Profile Extrusion

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm ³	ISO 1183
Bulk Density	674	--	g/l	ASTM D1895
Moisture Content	< 0.10	--	%	ASTM D6869
Relative Viscosity				
(Formic Acid)	75.0 to 90.0	--		ASTM D789
(Sulphuric Acid)	3.20 to 3.40	--		ISO 307

Films	Dry	Conditioned	Unit	Test Method
Film Puncture Force				ASTM F1306
1.0 mil, Biaxially Oriented Film	--	> 540	lbf	
Secant Modulus - MD				ASTM D882
1.0 mil, Biaxially Oriented Film	--	480000	psi	
1.5 mil, Cast Film	--	87200	psi	
Secant Modulus - TD				ASTM D882
1.0 mil, Biaxially Oriented Film	--	490000	psi	
1.5 mil, Cast Film	--	81000	psi	
Tensile Strength - MD				ASTM D882
Yield, 1.5 mil, Cast Film	--	4500	psi	
Tensile Strength - TD				ASTM D882
Yield, 1.5 mil, Cast Film	--	4500	psi	
Tensile Strength - MD				ASTM D882
Break, 1.0 mil, Biaxially Oriented Film	--	40600	psi	
Break, 1.5 mil, Cast Film	--	17600	psi	

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Films	Dry	Conditioned	Unit	Test Method
Tensile Strength - TD				ASTM D882
Break, 1.0 mil, Biaxially Oriented Film	--	43500	psi	
Break, 1.5 mil, Cast Film	--	14700	psi	
Tensile Elongation - MD				ASTM D882
Yield, 1.5 mil, Cast Film	--	6.5	%	
Tensile Elongation - TD				ASTM D882
Yield, 1.5 mil, Cast Film	--	6.4	%	
Tensile Elongation - MD				ASTM D882
Break, 1.0 mil, Biaxially Oriented Film	--	130	%	
Break, 1.5 mil, Cast Film	--	> 450	%	
Tensile Elongation - TD				ASTM D882
Break, 0.99 mil, Biaxially Oriented Film	--	130	%	
Break, 1.5 mil, Cast Film	--	> 500	%	
Dart Drop Impact				ASTM D1709A
1.5 mil, Cast Film	--	> 2000	g	
Elmendorf Tear Strength - MD				ASTM D1922
1.5 mil, Cast Film	--	71	g	
Elmendorf Tear Strength - TD				ASTM D1922
1.5 mil, Cast Film	--	91	g	
Free Shrinkage				ASTM D1204
MD, 320°F, Biaxially Oriented Film	--	0.90	%	
TD, 320°F, Biaxially Oriented Film	--	0.10	%	
Thermal	Dry	Conditioned	Unit	Test Method
Melting Temperature	455	--	°F	ISO 11357-3

Processing Information

Extrusion	Dry	Unit
Drying Temperature	158 to 176	°F
Drying Time	0.0 to 4.0	hr

Extrusion Notes

Recommended Injection Conditions:

Melt Point: 235°C

Cylinder Temperature: 245°C to 265°C

Die Temperature: 255°C to 275°C

Melt Pressure: 3 to 17 MPa

Blow Film Air Temperature: 20°C to 40°C

Chill Roll Temperature (Cast Film): 20°C to 40°C (clear) 80°C to 100°C (High Stable)

Recommended Process Moisture: 0.03 to 0.08%

Screw Design: General Purpose or Barrier

Notes

¹ Typical properties: these are not to be construed as specifications.